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STUDY PROJECT

PREDICTING LEADERSHIP POTENTIAL THROUGH PSYCHOLOGICAL TESTING

BY

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Predicting Leadership Potential Through Psychological Testing

An Individual Study Project

by

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Abstract

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This study investigates the potential for using psychological measures of intellectual ability to assist in executive leader selections. First, the behaviors required for the executive level leader are established by examining Army doctrinal publications and cases in current academic literature. Next, case studies from industry are examined to determine whether procedures used in industry have applicability to the Army. Those procedures which are applicable are offered as possible additions to the human resource program of the Army.

List of Illustrations

Introduction

The performance of quality leaders has been the hallmark of military organizations throughout history. The ultimate measure of success of these leaders is their performance and the performance of their units on the battlefield. In this environment, the leader's strength, vision and ability to motivate his force is evaluated in the most dramatic manner possible. Measuring a leader's performance in battle, however, is not practical for a nation at peace. And while performance in battle is the ultimate measure of the quality of a leader, it represents only a portion of the leader's challenges. Long before battle, the leader must establish a vision and outline the steps which prepare the unit for the conduct of war. These steps are long and arduous, marked by many milestones which must be reached if the unit is to achieve the vision which the leader has established.

Is it possible to identify the successful leader in advance of the battle with a better degree of certainty than by the method currently employed? Is the technology available to measure, early on, the aptitudes and abilities necessary to be a successful leader? If a predictive process is to be of any value, a consensus among today's leaders must be reached on a baseline definition of the qualities of a successful leader.

To define this successful leader, it is appropriate to review current leadership publications which recount essential

leadership characteristics: FM 22-100 states that a leader must "Be, Know, Do";[1] FM 22-103 contends that the essential task of senior leaders is to provide vision through attributes, imperatives, and perspectives;[2] DA Pam 600-80, Executive Leadership, augments the field manuals and assists executive leaders in understanding responsibilities and frames of reference required in the execution of senior leadership.[3]

These manuals approach leadership in three separate and distinct ways. At first glance, they may appear to demonstrate inconsistency in the Army's concept of leadership, but such is not the case. The commonality these publications share is that each tries to improve the leader's ability to lead through shaping of actions and a heightened understanding of behavior. Thus, a leader's behavior must be analyzed and understood in order to improve predictive techniques.

Four behavioral categories embody the qualities of leadership contained in current publications. These are:

* demonstration of character
* communication
* motivation
* intellectual ability (cognitive complexity)

Within these behavior categories, the aptitude to perform at a comparative level can be measured. It follows, then, that individuals with well-developed traits considered essential to a successful leader's behavior would perform better in leadership positions and would, in fact, make better leaders. To take the

argument one step further, if the aptitude for leadership behavior can be measured, such a measurement should be used as a predictive tool in the selection of future leaders.

As a part of a total human resource program, implementation of this concept could have widespread application. Existing policy, selection programs, training and evaluations provide much needed input for appropriate boards, panels and the like. Of the qualities cited above, cognitive complexity is not formally evaluated but becomes more important as the leader's level of influence increases. For this reason, cognitive complexity is discussed only as it applies to the executive level leader. The nature, measurement and application of these concepts to existing evaluation programs is addressed to improve leader selection and development systems.

Leadership Behavior

FM 100-5 states that leadership is the most essential element of combat power.[4] While superb leadership cannot fill the void created by shortages of equipment, supplies, or personnel, it provides the key to proper employment of the resources that are available on the battlefield. What successful leadership "is" can be studied by observing the behavior of successful leaders and by observing the performance of their units which, in most instances, will also be successful. Often, poor leadership may be examined by observing the leader of an

unsuccessful unit; a unit unable to complete its mission or fraught with problems with a leader that is unable to improve that performance. Why should one leader succeed and another one fail in an Army which stresses professional military education, provides equal opportunity to each officer to obtain that education, and publishes manual upon manual to assist in development and guidance of leadership skills? It is not the training these officers have received, nor the manuals they have read, that cause them to succeed or fail, but their actions while leading. For all the imperatives, principles, and definitions of leadership that are written, it is the behavior of the leader that "is" leadership.

The characteristics, qualities and skills of a successful leader must be established in order to compare the behavioral categories to the "object" leader. A review of Army leadership manuals assists this comparison.

Leadership Doctrine

FM 22-100, Military Leadership

As the basic Army leadership manual, FM 22-100 is written to establish hands-on leadership techniques and goals for leaders at the "rubber meets the road" part of the Army. This publication is designed to:

". . . help leaders operating at the working level: companies, troops, batteries, squadrons, and battalions. Those leaders include sergeants, warrant officers, lieutenants, captains, and field grade officers. Therefore, the manual has three major issues:

* To help you learn what a leader must *be, know, and do*.

* To help you teach, coach, and counsel your subordinates.

* To help you develop cohesive, disciplined, well-trained units that can win under the great stress of battle." [5]

Though the manual does not explicitly state that certain behaviors relate to the three issues addressed in the manual, it is clear that specific behavior can be inferred from the final results expected of the leader in execution of his duties. To further explain and define what the object leader must accomplish, FM 22-100 identifies eleven (11) principles of leadership. These principles may be logically grouped and related to a specific behavior in one of the categories cited earlier. The principles overlap in some instances, but can still be defined in terms of behavior.

FM 22-103, Leadership and Command at Senior Levels

This manual provides a broad framework for the senior leader

to assess his current abilities and style; in doing so, it provides sound reference for growth and self-improvement. It recognizes that leaders, regardless of grade, may benefit from the contents of the manual, thus improving their performance. Additionally, FM 22-103 highlights the complexity of leadership at senior levels and validates the need for behaviors associated with cognitive complexity, motivational skills, and communication skills. As stated in the preface, "...this manual recognizes the complexity of leadership and command at senior levels and the separate need to address indirect leadership concepts and fundamentals critical to building organizational teams."[6] Further, behavior related to character and a reaffirmation of the other three behavior categories are stressed in the following preface passage; "... senior leaders are skilled professionals possessing a vision of where the organization must go, who communicate that vision through example, teaching and their own tactical and technical proficiency, and who are tough enough to generate the organizational leadership power to win."[7]

A second expression of the manual's concept of leadership is contained in the first chapter and again, clearly recognizes the four categories of behavior that are proposed as measurable and permit some degree of predictive analysis.

> "Leadership and command at senior levels blends vision, communication, and craft to achieve proper command effect. Without vision, leaders and commanders become mechanics; without an ability to communicate, they are

impotent; and without craft they are dreamers. Successful senior leaders and commanders establish a clear personal vision or concept of what needs to be accomplished. Then, they communicate the concept to their organizations so that the desired intent is clearly understood. Finally, they apply their craft by being tough enough to ensure that their organization executes the actions necessary to make the vision a reality and achieve the desired result."[8]

While the behavior traits have not changed from those identified in FM 22-100, FM 22-103 provides a dramatic shift emphasizing cognitive complexity, communication, and motivation through indirect rather than direct means. This shift reflects that the environment of the senior leader is significantly more complex and diverse than that of the junior leader.

DA Pam 600-80, Executive Leadership

This pamphlet explores the definition and requirements of executive leadership as reported by executive level leaders faced with the day to day responsibilities of their positions. It provides "... a philosophy of leadership based on level-specific tasks... an understanding of the frames of reference that executive leaders use... the basis for a rational leader development process...".[9] The frames of reference identified in the overview of the manual's contents elevate the requirement for executive leaders to be capable of proactive rather than reactive

reasoning and capable of understanding complex systems, second order effects, and long term goals and vision. The emphasis on these abilities clearly requires that the cognitive complexity of the executive leader be sufficient for the task at hand. Add to this the ability for adept communication, motivation and strength of character, and the products of the intellect will be transformed from thoughts to actions.

The importance of DA Pam 600-80 is its emphasis on the cognitive complexity required of the executive leader. The importance of forming the correct vision which will impact for the following ten years is paramount, for if the vision is not correct or is inadequate, the nation's security could be at risk. A quality leader must possess the ability to formulate a vision and communicate that vision to numerous and varied factions while motivating them toward consensus. The ability to do so is essential to success in this demanding environment. Finally, the executive leader must embody the values, standards, and beliefs of the Army and the nation to perform at this level and have credibility.

While the specifics of each of these manuals are important, the shift from an emphasis upon the leader's direct actions to indirect action is most significant. This shift in emphasis parallels the increased need for solving complex problems, formulating strategy, understanding second order effects, and considering alternatives, all of which make demands of the leader's cognitive ability. Thus, the benefit of measuring

cognitive complexity and using this measure in a predictive manner is best suited for application at the indirect level of leadership.

The importance of having the ability to provide vision is well supported in academic literature also. "Abilities to set goals in changing contexts and to develop action strategies to work toward those goals are likely to be important predictors of managerial success."[10] Additional support for this concept is contained in the following passage "...common denominators that probably best describe the characteristics of potential future leaders are their abilities in innovativeness, creativity, and foresight or visioning. These special skills possibly can be detected and gauged early in their careers by training exercises or special testing instruments..."[11]

Leadership Behavior in Literature

In addition to Army manuals which identify the behaviors required of the leader, the academic literature also contains substantial support for this concept. Articles examining historical and contemporary leaders explain the success of these leaders based upon actions which match the behavior categories discussed previously. Studies of general officers conclude that there is a high correlation between achieving that level of responsibility and having the ability to solve complex problems for which cognitive complexity can prove so helpful.[12]

In his article, "The Pillars of Generalship," John M. Vermillion argues against the need for the executive leader to personally possess all of the talents and skills necessary to be successful, but he does confirm the need for these operations to be conducted. Vermillion states "The problem with so much emphasis on personal qualities is that even if the key ones could be identified, a leader probably cannot adhere to them all at the same time or all the time."[13] His solution to meeting this requirement is the use of staff officers as an extension of the leader's will. The assignment, selection and responsibilities of the staff are in fact an extension of the leader himself and they serves as agents for his actions. In doing so, the staff reflects the behavior that the leader would personally exhibit. He states "Operational leadership is a corporate endeavor, not individual, and it requires full complementarity between the commander and his staff."[14]

With regard to specific qualities, Vermillion recognizes communication as an essential skill that the operational level commander must master "... information must be communicated from the commander to his instruments of war...".[15] He adds that "Superior commanders at the operational level almost universally have been guided by a concern and talent for clear literary exposition."[16]

The second essential skill for the operational level leader is the ability to use the instruments of war to apply physical force against an enemy so that the desired results are

attained.[17] This is a product of the intellect of the operational level leader, a product of cognitive complexity. Intuitively then, before the operational leader can communicate intent he must think through complex problems involving force ratios, supplies, time, the enemy's capability, and political objectives. He must then formulate the proper vision prior to the onset of hostilities. This requires the highest level of complex thinking and decision making because "... once large formations are set in motion, it is nearly impossible to cause them to halt or change their directions quickly."[18]

Vermillion indicates that communication and cognitive complexity are the essential elements necessary for success of the operational level leader. His discussion of the use of staff officers to carry out specific actions may appear to contradict the need for specific behavior. To the contrary, using staff subordinates to implement the leader's vision provides additional support of the need for communication and motivational skills.

Another view of leadership and its associated characteristics is offered by LTG (Ret) Walter F. Ulmer, Jr. in his introductory comments to The Challenge of Military Leadership. This volume is a collection of writings on various views of leadership; Ulmer supports this work "Because military leadership remains basically an exercise in human motivation...".[19] The foundation for his belief is the basic principle that "... the key player in warfare remains the soldier."[20] This is true despite the many changes in technology

and the social environment in which the Army exists. He cites S.L.A. Marshall who stated in The Armed Forces Officer that "The art of leadership, the art of command ... is the art of dealing with humanity."[21] These statements recognize the importance of motivation and communication skills as necessary elements of the leader's behaviors.

Ulmer also identifies character and integrity as essential elements of a leader. The specific characteristics of each of these vary in different reviews of other great leaders, but idealism, trust, boldness, selflessness, tenacity, and individual responsibility all qualify for this category.[22]

The final quality, cognitive complexity, is discussed by Ulmer, "... we return to the power of the intellect as an essential component of leadership...".[23] He believes that advancement requires that the executive leader be capable of seeing change and adapting to that change. Failure to do so may lead to the decay of the organization and its eventual demise. With such strong support for cognitive complexity as an attribute of the executive leader, it is reasonable that Ulmer would support attempts to measure this quality and to predict leadership potential based on this measurement. He concludes, "Difficulties in our leader selection-and-development methodology derive in large part from the difficulty of measuring leadership or commandership."[24]

In addition to contemporary views on the subject of leadership, there are historical examples which support the

importance of intellectual ability. In "Napoleon on the Art of Command", Jay Luvaas concludes that "Napoleon would have agreed that good leadership was a combination of two kinds of qualities- qualities of the intellect (cognitive complexity), which are trained and cultivated; and those of temperament...". [25] In examining intellectual qualities of good leadership, Luvaas cites calculation as the most important, including problem solving through the examination of all pertinent factors, the anticipation of every potential outcome, and projection of these factors some months in advance. Napoleon's ability to remember every detail of military intelligence, the work capacity of his men, tactics, logistics, administration, and so on contributed to his ability to solve complex problems. In Napoleon's view, calculation was the key to arriving at the proper solution, but in the broader sense, Napoleon's processes of problem solving and decision making are clearly the product of his cognitive complexity.[26]

Cognitive Complexity

From the review of Army publications and the academic literature, it is clear that intellectual ability, or cognitive complexity, is an essential element for the successful performance of all leaders, especially the executive level leader. This term is not self explanatory however. What is cognitive complexity and what are the components which affect

leaders' actions? A great deal of research has been done on the subject of cognitive complexity. That research demonstrates that complexity has measurable components which are the key to its use as a predictive component of the leader's behavior.

Defining Cognitive Complexity

It is essential to define and establish the elements of cognitive complexity. In its very basic form, cognitive complexity is the mental process by which factors in a problem solving sequence are considered and how a decision is reached. This includes consideration of various alternatives, the weighting of factors and consideration of the effects the decision will have.[27]

Research in this area has approached the process from two perspectives, "what" the decision maker thinks in making the decision, and "how" the decision maker thinks in making the decision.[28] Robert W. Swezey's and Siegfried Streufert's theory explaining complexity (1986) "... focuses on *differentiation* (the number of dimensions that are relevant to an information processing effort), and *integration* (the relationship among these dimensions)...".[29]

Differentiation requires the separation of the numerous factors affecting a problem so that these factors are clear and distinct. They are then considered in an orderly manner in the decision making process. The combination of the factors to produce a decision is the integration portion of cognitive

complexity. The degree to which an individual can differentiate the factors bearing on a problem and the skill with which he is able to resolve the factors to a decision is a product of that person's cognitive complexity.[30]

Examination of the "how" of the process, rather than the specific "what" of a given decision making event produces dramatically different results and are the key to applying the theory to executive level leadership. While the "what" reports the events that led to a decision, the factors involved, the weights assigned, the second order effects, and many other descriptive elements, "what" is strictly an historical report. Examining the "how" of the of the executive leader's intellectual processes permits establishing a "road map" of the leader's ability to consider and relate various factors, establish and implement strategy, and meet rates of response demand. By using this "road map", a more thorough understanding of the leader is achieved and the information may be used when considering a specific candidate for future levels of responsibility.

Streufert and Swezey (1986), consider the responsibilities of the leader at the advanced organizational level, comparable to that of the executive level leader in the Army.

> "... a leader at advanced organizational levels must understand his or her people and his or her organization as they function interactively, and must be able to motivate and communicate. In dealings with people and with structural components of the

organization, a leader will encounter many conflicting thoughts, needs, demands and requirements. He or she cannot simply make a choice. The entire organization and its components, from the individual worker on up, must be considered. Such complex activities require high levels of flexible integration... The process of organizational integration, developed by astute and cognitively complex leaders can, in turn, generate a situation where the majority of employees feel motivated to support the organization because it supports them...".[31]

This understanding of the organization and the responsibilities of the leader matches the views expressed in Army publications and the attitudes taught for many years in formal Army schools. Given this similarity, application of the components of the leader's cognitive complexity identified by Streufert and Swezey offer considerable insight into the identification of leaders in the Army.

Measuring Cognitive Complexity

Subjective Measures For the level of an individual's cognitive complexity to be of any value in a predictive sense, it must somehow be measured. Techniques utilized by early theorists were subjectively based, mostly concerned with social perception. An example of such an evaluation method is the Sentence Completion

Test, developed by Schroder and Streufert (1962). In this test, subjects are asked to respond to sentence stems such as "When I am not sure what decision I should make....". The responses are then subjectively scored to determine a level of cognitive complexity. Although the Sentence Completion Test is relatively reliable, meaning that the results obtained are consistent from one testing to another, it does not correlate highly with other testing methods. Additionally, this test provides a general measure of cognitive complexity rather than more desirable specific information about an individual's complexity.[32]

Objective Measures Objective measures were sought to reduce the differences in scoring experienced in the subjective testing methods. While the intent to reduce the subjective nature of the testing process was an improvement, the results were not as beneficial as hoped. The results showed that the subjects found it very difficult to respond to questions regarding their ability to perform the functions of differentiation and integration. Most subjects responded in a manner that was judged to be socially acceptable because the subjects were not able to explain the "how" of their thought processes. Follow on objective tests concentrated on observing performance and did produce results which were useful to identify; persons who neither differentiate nor integrate, two classifications of differentiators, and two classifications of integrators.[33]

The Matrix A significant advance in the measurement of cognitive complexity is provided through the use of a time-event matrix.

The matrix is used to record events that occur within a specified period of time, one example being a time-decision matrix in which decisions would be compared against time. Through analysis of such a matrix, it is possible to graphically represent the decision making process of an individual. This graphic

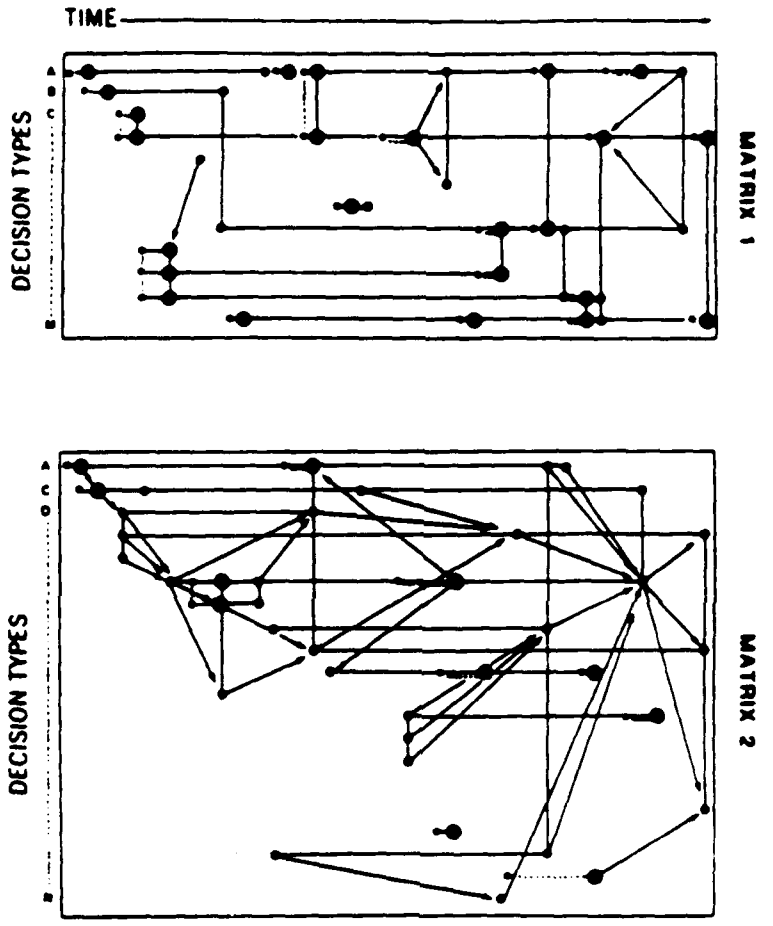

FIGURE 6.2. Each point represents a decision. Each vertical line connects decisions made at the same point in time. Each horizontal line connects decisions of the same type made at different points in time. Each diagonal represents the strategic integration of different decisions at different points in time. Diagonals pointing forward reflect advance strategic planning. Each circled dot represents a decision response to information received at •. The dotted distance from • to ⊙ reflects the information to decision interval. Each decision type represents a self-selected differentiated decision category based on available resources.

Figure 1[34]

representation includes strategy and the interrelationship

between decisions. Once a matrix has been generated, a variety of measurement standards may be applied to it. These may include counts of the number of decisions, the number of decision categories, the number of respondent decisions and the average speed of response. In addition, more complex analysis is possible to allow the examination of integration and strategy. This analysis, which produces a deeper understanding of reasons, goals and strategy, is the value of the matrix.[35]

In Figure 1, matrix 1 and matrix 2 demonstrate how different individuals' decision processes are represented. Even without an extensive understanding of the matrix design, data collection methods, or analysis, it is clear that matrix 2 represents an individual with a more complex decision making process, one with a more complex strategy and a more rapid response rate as the diagonal lines (strategy) are shown.

Although the preeceding discussion has focused on a time decision matrix, other events could be measured; communications, information gathering, action classification, or any other class defined by the designer of the matrix.[36] Through the use of multiple matrices, a more thorough understanding of an individual's complexity can be achieved.

Simulations Simulations provide another method of examining mental processes. Some types of simulations may be classified as free in which participants begin the simulation with a specified set of conditions. From the starting point, they are free to interact without restriction in the simulation process. Although

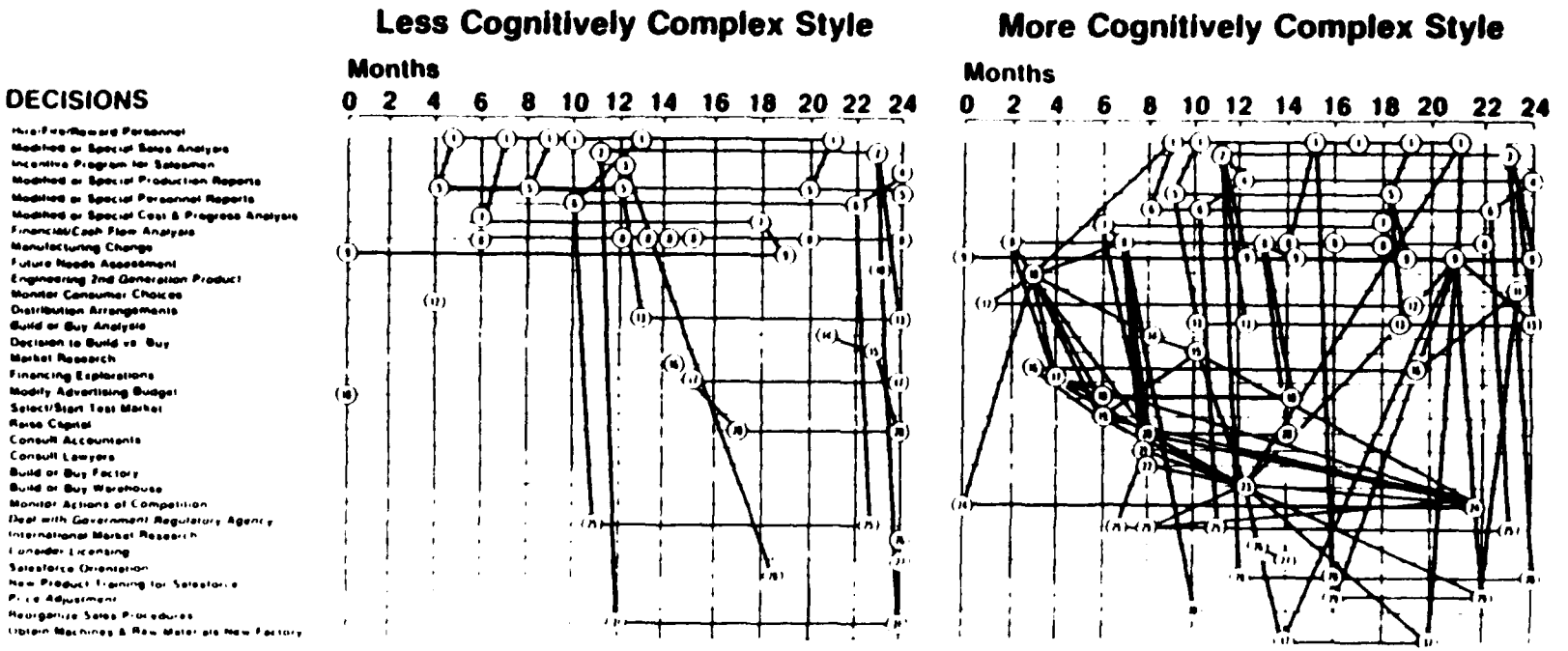

FIGURE 7.15. Senior executive descriptions of a poor and an excellent decision maker. The left matrix, representing a less cognitively complex decision style reflects poor, the right matrix, representing a more cognitively complex style reflects excellent decision making. (Reprinted (in modified form) from Streufert, S. The dilemma of excellence. *International Management*, 1984, *39*, 36-43.)

Figure 2

such procedures are valuable for training purposes, they are not appropriate for evaluation.[38]

A more suitable method to evaluate an individual's decision making process, and more broadly, cognitive complexity, is the experimental or quasi-experimental simulation. In these simulations, programmed responses are incorporated and provide the subject with direct feedback to the actions taken previously. Through the use of microcomputers, these simulation techniques can be used to record data which will generate a time-event matrix as shown at Figure 2. Speed and ease of administration and data collection are distinct advantages of the microcomputer version of such simulations and provide tremendous potential for practical application.[39]

Leaders and Subordinates

The interaction between the leader and the subordinate was evaluated by Streufert, Streufert and Castore (1968). They sought to compare cognitive complexity against a set of leadership characteristics developed by Stogdill (1948). The results, shown at Figure 3, reveal distinct differences between the cognitively complex leader and the less cognitively complex leader. The complex leader scored significantly higher in tolerance of uncertainty, assumption of the leadership role, consideration of others, and predictive accuracy. The less complex leader was rated higher in initiation of structure, production emphasis, and demand for reconcilition.[40] The profile

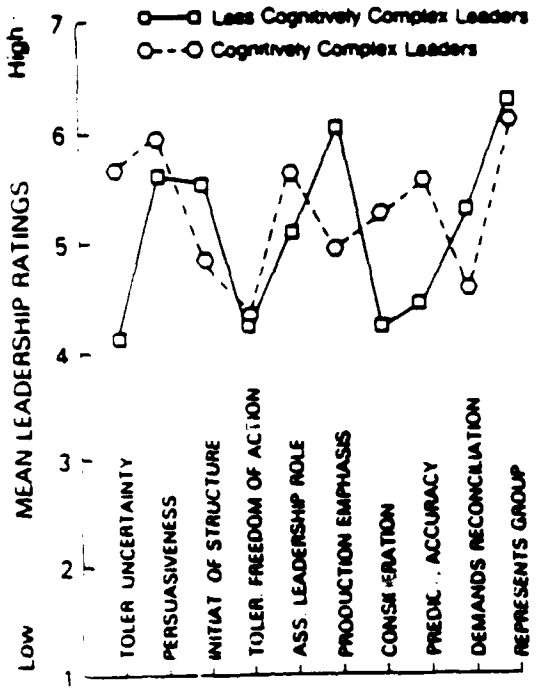

FIGURE 7.6. Mean leadership ratings on Stogdill's characteristics for leaders of simple and complex conceptual structure. (Reprinted from Streufert, S., Streufert, S. C. and Castore, C. H. Leadership in negotiation and the complexity of conceptual structure. *Journal of Applied Psychology*, 1968, 52, 218-233.)

Figure 3.[41]

of scores for the more complex leader reflect the "temperament" of a leader, defined by Luvaas as an essential element for the military commander.[42] These characteristics also relate to the motivation, communication, and personal attributes and behavior categories described in this study. Linking them to cognitive complexity is an important step in defining the object leadership traits for predictive purposes.

Cognitive Complexity and Decision Making

Through the use of simulations, Streufert and Swezey have

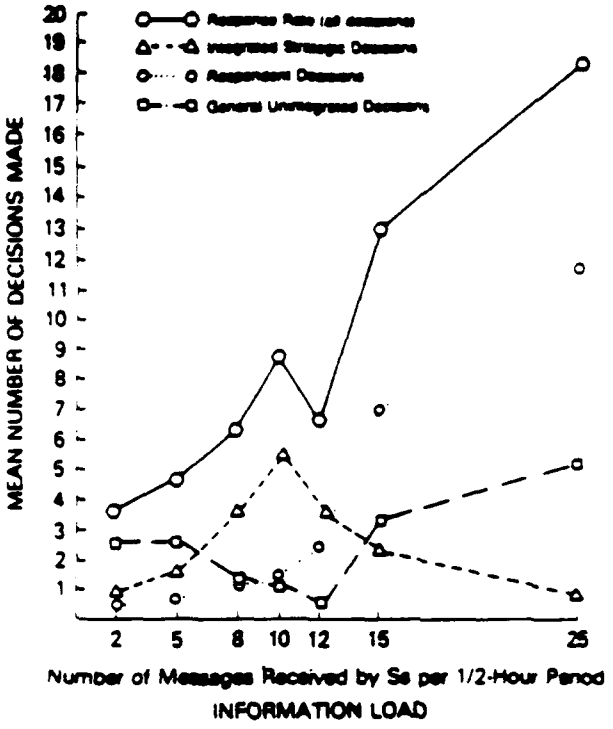

FIGURE 7.9. Effects of information load on decision making in a complex simulation task. (Reprinted from Streufert, S. Complexity and complex decision making: Convergences between differentiation and integration approaches to the prediction of task performance. *Journal of Experimental Social Psychology*, 1970, 6, 494–509. Reprinted with permission from Academic Press, Inc.)

Figure 4.[43]

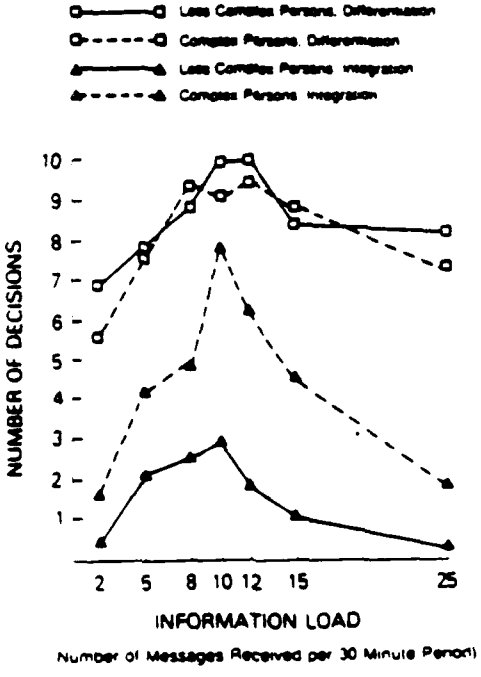

FIGURE 7.10. Effects of information load on differentiation and integration in decision making. (Reprinted from Streufert, S. Complexity and complex decision making. *Journal of Experimental Social Psychology*, 1970, 6, 494–509. Reprinted with permission from Academic Press, Inc.)

Figure 5.[44]

investigated decision making in individuals having varying degrees of complexity. The simulation results produced information on the type of decisions made compared to information load and the number of decisions made by the four groups of differentiators and integrators identified earlier.[45] Figures 4 and 5 display these data.

These figures demonstrate the effect of information load on the number of decisions made and the quality of those decisions. As shown in Figure 4, as information increases beyond the 15 messages per 30 minute period, respondent (reactionary) decisions increase while strategic decisions decrease. Figure 5 reveals that information load impacts on the decision rates of both integrators and differentiators. The performance of the complex individuals is best up to the information load rate of 15 messages per 30 minute period, but decreases above that rate. The importance of this discussion is that there is a point at which an individual reaches "information overload", where both the quantity and quality of that individual's decision making processes deteriorate. From a predictive standpoint, it must be realized that even the most complex individual can reach a condition of overload.

Application of Cognitive Complexity

The variety of measurement techniques and the diversity of elements that can be measured, provide tremendous opportunity for

application. Whether it is specific rates of response, information capacity, or characteristics of temperament that are desired, there is a form of measurement appropriate for the task. However, any measurement method selected for use by the Army must meet the need as defined for the organization.

The most consistent need expressed in both Army publications and the academic literature is for the leader to have "vision". This quality "...is the single factor that enables the theater commander...to discern the means for attainment of the ultimate political objective throught the employment of military force."[46] Is having or applying strategic vision really that ethereal, or is it more understandable? In fact, isn't vision really planning for the future? Likened to planning, vision is "... basically an analysis of the company's position with respect to its environment... and an attempt to take these factors into account when choosing a strategy. It is also an attempt, through the adoption of a strategy, to make decisions that are consistent and purposeful...".[47] Thus, having strategic vision is a combination of decision making and implementation of strategy to achieve an end state.

The ability to decide and implement strategy then, is obviously the most useful element of intellectual ability when "vision" is the necessary ingredient for being a successful executive leader. Of the measurement techniques examined above, simulations best suit the measurement of these abilities, for "...simulations provide a rich medium for the assessment of

managerial competence. Complex settings that resemble actual organizational demands can be presented and complex, overt responses resembling on-the-job behavior can be elicited. ... Simulations can be used to predict managerial potential (Thornton & Byham, 1982). They provide a standardized method for observing behavior often lacking in evaluations of on-the-job performance."[48] As in the case of the matrices at Figure 2, a graphic representation of decision making ability and strategy is generated through the use of a computer driven simulation.

Leadership and Industry

Human resource (HR) development programs in industry recognize the importance of leadership to the success of their organizations, demonstrating that the civil sector distinguishes between leading and managing. In the words of Donn A. Starry, "Despite the differences between the military and industry, the practice of leadership and management in the two arenas is not so dissimilar as one might think. Cut to the bone, it's a matter of running things."[49] Additionally, "In the civilian sector, scholarly work in the area of strategic management signaled an interest in leadership at the top levels of the organization by arguing that the work of senior executives is qualitatively different from the work of lower-level managers and therefore deserves unique emphasis in theory as well as in practice."[50] This focus taken by industry leads to programs designed to

identify and nurture the qualities necessary to meet the strategic business needs of the company.

Human Resource Management Programs

The direction taken in industry toward human resources emphasizes that programs adopted must be comprehensive and directed toward achieving the strategic business needs of the organization. Individual development, personnel selection, policy, procedures, motivation, communication, and values are all included in this development effort. Industry's focus on achievement of its strategic business needs compares well to the Army's need for strategic vision and direction as critical skills for the executive level leaders. The processes and structure of industry HR programs therefore, may have application to the Army.

One example of a comprehensive HR program is the 5-P Model developed by Schuler of the Stern School of Business, New York University.[51] The 5-P Model is designed to address all activities of the organization that involve people and the impact of those activities on the strategic business needs and goals of the organization. All elements of the model are contained in one of the following categories: HR Philosophy; HR Policies; HR Programs; HR Practices; and HR Process, thus the 5-P Model title. Unlike the development and implementation of an individual policy or procedure which may be expedient, or the academic treatment of an isolated principle which may be thorough, all elements of the 5-P Model are focused on the strategic business needs of the

organization and are formulated to achieve these goals. No one element is considered or developed in isolation but rather as an integral component of the total HR program.[52]

The importance of leadership, not management, is recognized as essential in illustrations of HR programs designed within the 5-P Model presented below. Regarded as vital to these programs leadership roles provide "... establishing direction, aligning people, motivating and inspiring individuals, and causing dramatic and useful change."[53]

Forest Products Company

The Forest Products Company (FPC) recognized the need to implement major changes in its organizational practices and procedures if the company was to meet newly established strategic goals. As an investment in the leadership of the company, FPC established a Leadership Institute with the major task of development of the top level leadership which was responsible to guide the company through the major overhaul undertaken. Although starting with top executives, the program was expanded to include mid-level managers.[54]

Grand Union

At Grand Union, a retail grocery chain, a need for major strategy change was identified if the chain was to remain competitive. The strategic business needs of the firm were

addressed and redefined by top level management resulting in a new strategy, a new vision. Implementation of this strategy required that top managers and store managers provide leadership by "...articulating and providing excitement, giving vision and showing confidence in the firm's ability to successfully change in the new, more uncertain environment, and setting objectives that all relate to the new way of doing business."[55] This expression of leadership at Grand Union is consistent with the leadership principles for the Army officer.

Pepsi-Cola International

The challenge faced by Pepsi-Cola International includes operational sites in more than 150 countries which employ over a quarter of a million people. Although this company is not as large as the Army, its size and global nature permit analysis for possible comparison to Army programs. As a base concept, the HR program identifies these basic goals; improvement of individual and organizational performance, and a coordinated yet firm decentralized headquarters. These goals are consistent with those of the Army, thus allowing examination of the Pepsi-Cola International human resources study for application.[56]

Pepsi-Cola has demonstrated that vision is an integral portion of its strategy in designing programs needed to succeed in the year 2000. Additionally, stated business objectives include; the development of talented people, a focus on growth, and quality business plans. Development of talented people and a

focus on growth require no further explanation. Quality business plans stress the need for continuous improvement in strategic planning.[57]

The company has developed two separate training and assessment programs for different level leaders. Executive level leaders participate in a confidential assessment program at least every 18 months during which their performance is compared against 33 defined leadership practices. Mid-level managers participate in a program titled "Excellence in Management" which focuses on basic managerial skills that apply to execution rather than strategy.[58] These separate levels correspond, by virtue of their stated level and style of execution, to those defined as senior level and executive level in the Army.

Managerial Assessment Procedures

Industry assesses managerial ability and potential for a variety of reasons, promotion, selection for a particular position, evaluation of performance, and prediction of managerial effectiveness. The assessment process employs "...multiple measures of key behavior domains and deriving indicators of these behaviors from past experiences and personality measures,the typical assessment center is able to examine the ability of individuals to act on their environments."[59]

While a full range of assessment techniques are employed by assessment centers, care is taken to consider each factor in formulation of a "whole person" picture. Individually,

Table 4.8
Illustrative Assessment Center Dimensions

Early identification	Promotion	Developmental planning
Communication Skills	Oral communications	Oral Communication Oral Presentation
	Written Communication	Written Communication
Energy	Energy	
Job Motivation (obtained from an interview)	Job Motivation (obtained from an interview)	
Career Ambition (obtained from an interview)	Career Ambition (obtained from an interview)	
Initiative	Initiative	Initiative
	Creativity (obtained from an interview)	
Sensitivity Leadership	Sensitivity Leadership	Sensitivity Individual Leadership Group Leadership Behavioral Flexibility Negotiation
	Tolerance for Stress	
Planning and Organizing	Planning and Organizing	Planning and Organizing
	Delegation	Delegation
	Management Control	Management Control
Decision Making	Decision Making	Analysis Judgment Decisiveness

Figure 6.[60]

evaluation techniques may be very powerful, but it must be realized that no individual element should be considered as the sole deciding factor when making an assessment of an individual's leadership potential.[61]

Assessment centers consider a full range of individual personality dimensions and traits. Figure 6 shows a sample of the range of these dimensions. These correspond to the behavior categories discussed earlier.

In predicting managerial effectiveness, the following five

approaches are most commonly employed.

* supervisor's rating of potential
* psychometric testing and other paper-and-pencil measurements
* clinical evaluations by psychologists and related professionals
* background interviews
* assessment centers

Of these methods, most commonly used is the evaluation by the immediate supervisor.[62]

Psychological testing provides a high level of objectivity and sound relationship with job success. Opponents of these tests argue that such methods are artificial in their evaluation of people, and that personality and intelligence are only a small part of managerial effectiveness. Thus, this method is most controversial. Despite the controversy, about one-third of all organizations use some form of psychological testing for evaluating managerial potential. Of these, tests measuring cognitive ability and aptitude withstand the scrutiny of their standardization and objectivity.[63]

Assessment of managerial potential is an important task for industry. It is approached differently by each organization, consistent with that organization's philosophy and HR program.

Industry Highlights

Common among the model and the examples cited, is the

necessity for the executive to be able to formulate a strategic vision that will meet the objectives of the firm in the future. Further, and no less important, is the necessity for the leader to have the personal skills required to direct the company toward this vision. Included in these are decision making, motivation, and communication. Additionally, each of the firms cited have developed a total HR program to meet these needs rather than resorting to stop-gap measures which may be expedient but which will not suffice over the long term. This committment to fully integrated and comprehensive programs in pursuit of managerial and executive leader excellence demonstrates that the investment in such programs is both, worthwhile and cost effective in the civil sector. Given the similarity between industry and the Army, the same investment could prove to be beneficial in the same manner.

Evaluation Procedures

Organizations rely on the evaluation of their personnel for a variety of reasons and administer those evaluation in a variety of ways. Of the assessment methods available, the rating by superiors is the one most commonly used. The preparation of an Officer Efficiency Report (OER) is a form of this evaluation method.[64]

Using the supervisor's rating of potential has numerous advantages which warrant its popularity in industry. These

advantages include.

* Practical considerations; ease of implementation, ease of operation, cost of operation, and small amount of time to train evaluators
* Reactions of superiors; acceptance and control by immediate supervisor
* Acceptability to EEOC

Because of these advantages, ratings by superiors are a good solution for most organizations, allowing evaluation of personnel and use of this information to determine potential for more demanding responsibilities. These same advantages support its use by the Army.

However, there are disadvantages to this form of assessment which derive in large part due to its subjective nature. These disadvantages, which are related to the measurement procedures include:

* standardization
* objectivity
* reliability
* content validity

Of these disadvantages, lack of standardization is the most significant. Raters are required to evaluate employee performance for people serving in different jobs with varying responsibilities. Though ratings for these workers may be fair, they may not be equitable. Additionally, the ability of the rater is not consistent. Each rater has a different writing

ability, a different view of the rated worker's performance, and an individual view of the rating system, meaning how it does and should impact on the worker's future.[65]

These same disadvantages apply to the OER system used in the Army. Supporters of the system would contend that, over time and through numerous reports, an accurate evaluation of an individual's performance and potential is developed. It is true that more ratings by a variety of superiors will reduce the effects of lack of standardization and result in a more accurate representation of the officer's performance and potential.

The use of these reports by the Army is not concerned with the past, the time during which the rating was formed. But, the Army is concerned with the future and uses the OER to select for levels of increased responsibility, thus in a predictive manner. OERs are used to determine whether or not an officer should be promoted to the next higher grade, be assigned as a commander at battalion and higher level command, serve as a Program Manager for the development and acquisition of weapons systems, or attend Army schools to improve their talents.

This use of OERs is, therefore, predictive in nature. Predictive validity demands that the superior's rating compare the performance reported against the performance demands of a higher level of responsibility. Generally, the demands of higher levels of responsibility are understood by the officers making selections for these promotions, commands, program managers, and schools for these officers have long and varied experience in the

Army. Further, in the selection process, more than just one officer contributes to the selection through the use of selection panels. Could this system be better?

Improving this system requires that specific requirements of the next higher level of responsibility be defined. In addition to defining unit size and mission responsibility, psychological traits necessary for the duty position could also be included. Because selections involve assigning officers to higher levels of responsibility, it would be desirable to select officers who have a greater ability to formulate a vision and implement a strategy than to select those with a lesser ability. It would also be desirable to select officers who possess the elements of temperament consistent with the defined demands of the higher levels of responsibility. It would be desirable to select officers who are capable of solving complex problems that will challenge them in their forthcoming duties. These abilities can be measured through the use of psychological testing.

Conclusions

Leadership Doctrine and Development

Leadership in the Army is essential to the successful conduct of land warfare as reported in Army manuals. Through these manuals, the development of leaders begins with basic principles and personal traits and continues with increasing emphasis on mental processes commensurate with increasing levels

of responsibility. As a key element of this development, strategic vision is cited as critical to properly direct this large organization to meet the challenges of future years. Consistent with Army manuals, academic literature on the subject supports the need for the leader to have vision and superior mental capability.

Psychological Rersearch on Cognitive Complexity

Psychological studies and research on the subject of cognitive complexity show that more cognitively complex persons are better able to formulate and implement strategy when studied is scenarios that consider long term programs and require the formulation of long term goals. These studies also permit the measurement of leadership traits of individuals and allow comparison of those that are cognitively complex versus those that are less cognitively complex. The ability to measure decision making ability, in which the type and rate of decisions made, can also be provided through tests. Simulations are best suited for these measurements. One type available is the quasi-experimental simulation which can be administered by a desk top computer. A specific simulation scenario could be developed to measure the exact elements required for specific duties and administered in the same manner.

Leadership and Industry

Selecting the right person for the job is a matter of considerable importance in industry and in the Army. Both have

invested considerable interest in programs to assist in this process through the development of procedures to do so. As such, these systems closely parallel each other. The Army and civilian industry have identified the requirement for establishing long term goals as key to the functions of these managers and leaders. Both recognize the need for top level leaders to motivate the organization toward the vision that the leader has established. Both are faced with the problem of how to identify and develop leaders to meet these requirements as personnel changes occur. Finally, both have implemented programs to identify, select and develop future leaders in a manner consistent with the philosophy of the organization.

Current Evaluation Procedures

Current evaluation procedures in the Army consist of ratings by superiors. These ratings are used to select personnel for a variety of positions of increasing responsibility. This method of evaluation has advantages which support its continued use for these purposes. However, this system also has disadvantages which reduce its effectiveness and efficiency and may cause executive level leaders to question its sole reliance given the availability of other procedures for this purpose.

Recommendations

1. It is recommended that specific requirements of positions of responsibility, those held by executive level leaders, be further

defined to include the psychological traits required to perform those duties.

2. It is recommended that a quasi-experimental simulation that can be administered by a desk top computer be developed to measure the psychological traits determined necessary for the duties defined in 1 above.

3. It is recommended that a test be implemented as a component of a total Human Resource Program for the development and selection of executive level leaders.

4. It is recommended that the current Official Military Personnel File composition be augmented through the inclusion of psychological test results designed to measure these psychological traits.

Endnotes

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3. Headquarters, Department of the Army, Department of the Army Pamphlet 600-80, Executive Leadership, p. 1. (hereafter referred to as "DA Pam 600-80").

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39. Ibid., pp. 163-164.

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45. Ibid., pp. 181-183.

46. Mitchell M. Zias, "Strategic Vision and Strength of Will: Imperatives for Theater Command." The Challenge of Military Leadership, p. 85.

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49. Donn A. Starry, "Running Things," The Challenge of Military Leadership, p. 10.

50. George B. Forsythe, "The Preparation of Strategic Leaders," Parameters, p. 39.

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